

ABSTRACT OF THE DISCLOSURE

In a semiconductor device having a semiconductor element having a plurality of SOI-Si layers, the height of element isolation regions from the surface of the semiconductor substrate are substantially equal to each other. Alternatively, the element isolation regions are formed at the equal height on the semiconductor substrate and then a plurality of SOI-Si layers appropriately different in thickness are formed. In this manner, it is possible to obtain element isolation regions having substantially the same height from the semiconductor substrate and desired element regions having SOI-Si layers different in height. The thickness of a single crystalline silicon film (SOI-Si layer) may be appropriately changed by another method which includes depositing an amorphous silicon film and applying a heat processing to form an epi layer, and removing an unnecessary portion.